Models & Sensors to Measure Real-World Muscle Function & Movement

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ROCKY MOUNTAIN MUSCLE SYMPOSIUM PRE-CONFERENCE SUMMIT

JUNE 18, 2023
CANMORE NORDIC CENTRE
1988 OLYMPIC WAY, CANMORE, AB, CANADA

AGENDA – JUNE 18, 2023
(IN LOCAL TIME- MDT)

9:00 am **Breakfast & Registration**

9:30 am **Welcome & Opening Remarks**
Richard L. Lieber, Ph.D. & Jennifer Hicks, Ph.D.

9:45am **Session 1: Latest Advances in Sensing and Models**

Invited Talks

Eni Halilaj, Ph.D.
Capacitive Sensing for Muscle-Activity Monitoring in Natural Environments

Levi Hargrove, Ph.D.
The Struggle is Real: Overcoming Real-World Obstacles in Myoelectric Prosthetic Control

Research Talks

Brett Meyer, Ph.D. Candidate
Remote Assessment of Postural Sway in Persons with Multiple Sclerosis

Abu Bony Amin, Ph.D. Candidate
Quantitative Assessment of Movement and Posture in Aquatic Rehabilitation with Spectral Analysis of EMG and IMU Data

Shusuke Okita, Ph.D. Candidate
Measuring Diversity and Complexity of Real-World Upper Extremity Movement after Stroke

11:15 am **Break**

11:30 am **Keynote Speaker**
Dario Farina, Ph.D.

12:15 pm **Lunch**

1:30 pm **Session 2: Clinical Home Runs & Lessons Learned**

Invited Talks

Jennifer Hicks, Ph.D.
Large-Scale, Real-World Biomechanics: Challenges and New Discoveries

Arun Jayaraman, PT, Ph.D.
Wearable Sensors, Smart Phones, and Machine Learning: Impact on Rehabilitation Medicine

Research Talks

Michael J. Asmussen, Ph.D.
Estimating the Effects of Tendon Compliance on the Energy Cost of Walking in Individuals with Ehlers-Danlos Syndrome

Jennifer N. Bartloff, Ph.D. Candidate
Pairing IMU Trajectory with 3D Foot Scans for Comparison of Whole-foot Minimum Clearance Among Foot Drop Interventions in Multiple Sclerosis

Andrew Sawers, Ph.D.
Findings from a Structured Fall Survey Designed for and Administered to Lower Limb Prosthesis Users: Potential Uses of Wearable Sensors to Reduce Fall-related Events

3:00 pm **Break**

3:15 pm **Session 3: Demos & Tutorials**

Matthew Petrucci, Ph.D.
OpenCap: Motor control and musculoskeletal forces from smartphone videos

Dylan G. Schmitz, Ph.D.
Real-Time Assessment of In Vivo Musculotendon Loads During Dynamic Activities

Cameron R. Taylor, Ph.D.
Magnetomicrometry Demonstration

4:15 pm **Discussion & Closing Remarks**
Richard L. Lieber, Ph.D. & Jennifer Hicks, Ph.D.

4:45 pm **Happy Hour**